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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/618,741	07/18/2000	Thomas M. Hartnett	07206-118001	8640

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DALY, CROWLEY & MOFFORD, LLP  
SUITE 101  
275 TURNPIKE STREET  
CANTON, MA 02021-2310

EXAMINER

DERRINGTON, JAMES H

ART UNIT	PAPER NUMBER
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1731

7

DATE MAILED: 04/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application N .		Applicant(s)	
	09/618,741		HARTNETT ET AL	
	Examiner		Art Unit	
	James Derrington		1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____   |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> | 6) <input type="checkbox"/> Other: _____                                    |

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11, 13-26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maguire et al (4,686,070) in view of Serpek (1.030,929)

Maguire et al disclose the process of preparing ALON by subjecting a mixture of alumina and carbon to nitrogen gas at an elevated temperature (See Col. 2, lines 35-67). The claims additionally recite:

“dispersing” the alumina particles (claim 1),  
agitating the mixture of alumina and carbon in a chamber (claim 6),  
rotating the chamber (claim 8),  
agitating and removing (claim 14),  
agitating by rotating (claim 17),  
or continuously introducing and agitating (claim 25).

All of these manipulative steps are inclusive of employing a rotary furnace or heated rotary chamber for conducting the process of forming ALON by reaction of nitrogen gas with a mixture of alumina and carbon. Serpek disclose the process of introducing a mixture of alumina and carbon into a rotary reaction chamber or furnace where nitrogen gas is introduced for the formation of aluminum nitride. (See Fig.1 and paragraph bridging pages 1 and 2. This technique provides for even heating and insures more intimate contact with the gas (page 2, lines 5-8). It would have been

obvious for one of ordinary skill in the art to have conducted the process of Maguire with a rotary furnace in order to provide the advantages as set forth by Serpek.

It is recognized that both the instant claims and Maguire et al disclose the production of ALON while Serpek discloses preparing ALN. However as evidenced by the teachings of Maguire et al, ALN is first formed during reaction of alumina and carbon with nitrogen at about 1550 °C and subsequently at 1750 °C ALON is formed. Thus it would have been obvious to use the temperatures recommended by Maguire et al for the formation of ALON if this is the material desired. Maguire et al show formation of bodies from ALON including transparent bodies (Col. 4, line 63) and the step of sintering while Serpek disclose the use of a continuous process with a hopper.

Claims 12 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maguire et al (4,686,070) in view of Serpek (1,030,929 as applied to claims 1-11, 13-26 and 29 above, and further in view of the Abstract of JP403023269A or Dodds et al (5,925,584).

JP403023269A disclose that bodies having superior linear transmissivity can be produced by hot isostatic pressing. Dodds et al disclose hot isostatic pressing to be conventionally used in the art (Col. 10, lines 29-30) for densifying aluminum oxynitride containing materials (Col. 10, lines 27-41). It would have been obvious for one of ordinary skill in the art to use this technique with the process of Maguire et al as modified by Serpek for art recognized reasons.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23-24 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Maguire et al (4,686,070).


This reference discloses ALON. The instant claims 23-24 are product-by-process claims and accordingly the standards set forth in MPEP 2113 will be followed. Even though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself, i.e. differences in product characteristics, and not on its method of production.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Derrington whose telephone number is 703 308-3832. The examiner can normally be reached on 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703 308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703 305-7718 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

jd  
March 24, 2002

  
JAMES DERRINGTON  
PRIMARY EXAMINER  
ART UNIT 137-1731